

SHOBHIT NIRWAN's
DESIGNED



AGRICULTURE

NEW NOTES FOR CLASS 10 2022 EXAMS

Including NCERT Line-By-Line Questions
PYQs in MCQ Format
CBSE Sample Paper
Flowchart

Institutional and Technical Reforms to Help farmers

Types of Farming

- Primitive Subsistence Farming
- Intensive Subsistence Farming
- Commercial Farming

3 main cropping seasons in India

- Rabi
- Kharif
- Zaid

Agriculture

Grains and leguminous crops

- Rice
- Wheat
- millets
- Maize
- Pulses

Food Crops other than Grains

- Oil Seeds
- Tea
- Sugarcane
- Coffee
- Horticulture Crops

Non-Food Crops

- Rubber
- Fibre Crops
- Cotton
- Jute

Agriculture is a primary activity which produces the food we eat and raw material for industries.
India is an agriculturally important country, two-third of the population is engaged in agriculture.

Types of Farming

#1) PRIMITIVE SUBSISTENCE FARMING:-

It is done on a small patch of land with help of primitive tools like hoe, digging sticks and dao, and family labour. The production is for self-consumption which depends on monsoon, natural fertility of the soil and other environmental conditions. It is also called Slash and Burn Agriculture.

In this agriculture, tribals/farmers clear a patch of forest land and burn it for their agricultural practice and then leave the patch idle for few years. This allows the nature to replenish the fertility of the soil.

It is known by different names:

NAME	PLACE
Jhumming	North Eastern India
Dipa	Baster and A&N Islands
Milpa	Mexico and Central America
Roca	Brazil
Ray	Vietnam
Masole	Central Africa

#2) INTENSIVE SUBSISTENCE FARMING:-

It is done on land of high population pressure. High doses of biochemical inputs and irrigation is used to obtain higher production.

#3) COMMERCIAL FARMING:-

The main feature is that high doses of modern inputs like high yielding variety (HYV) seeds, chemical fertilisers, pesticides, and insecticides used to obtain higher productivity.

Plantation is a type of commercial farming in which only a single crop is grown on a large-scale, using capital intensive input with the help of migrant labourers. A good network of transport, communication, proper market facilities are required for this.

eg:- Tea in Assam and Coffee in Karnataka.

3 Main Cropping Seasons of India

#1) RABI CROPS :-

These crops are sown between October to December, and are harvested between April to June.

Eg: Wheat, Barley, Peas, Gram and Mustard.

#2) Kharif CROPS :-

(May-July)

These crops are sown at the onset of monsoon season, and are harvested in September-October.

Eg: Paddy, Maize, Jowar, Bajra, Urad, Moong etc

#3) Zaid CROPS :-

These crops are sown between Rabi and Kharif season (March-June).

Eg: Watermelon, muskmelon, cucumber, vegetables and fodder crops etc.

MAJOR CROPS OF INDIA

Grains and Leguminous Crops

Imp. Grains - Rice, wheat, millets and maize
leguminous crops - Pulses

RICE: (चावल)

- India is second largest producer of rice in World after China.
- It is the most important and staple food crop of majority of Indians.
- It requires high rainfall (above 100cm) and high temperature (above 25°C) to grow.
- It can be grown in low rainfall areas with help of proper irrigation.
- Major rice producing states are West Bengal, Bihar, Chhattisgarh, Odisha, Jharkhand, UP, Tamil Nadu, Assam, Kerala etc.

WHEAT: (गेहूँ)

- It is the main food crop in north and north-western part of country.
- This Rabi crop requires a cool season and bright sunshine at the time of ripening.
- Rainfall should be between 50 to 75cm.
- There are two important wheat growing zones in country -
 - Ganga-Satluj Plains
 - Black Soil Region in Deccan.
- Major wheat producing states are UP, MP, Haryana, Punjab, Uttarakhand, Rajasthan

Millets: (बाजरा)

- Also called coarse grains.
- Jowar, Bajra and Ragi are important millets grown in India.
- Have high nutritional value.

Maize :- (मक्का)

- It is a crop which is used both as food and fodder.
- It is a kharif crop but also Rabi crop in Bihar.
- It requires temperature between $21^{\circ}\text{C} - 27^{\circ}\text{C}$.
- It grows well on old alluvial soil.
- Major maize producing states are UP, Madhya Pradesh, Andhra Pradesh, Karnataka.

Pulses :- (दाल)

- India is largest producer and consumer of pulses.
- It is the main source of protein in a vegetarian diet.
- Major pulses grown in India are Urad, Arhar, Moong, Masur, Peas and Gram.
- Pulses need less moisture and can survive in dry climate.
- Being leguminous crops, all these are grown as rotational crop to restore the soil fertility by fixing nitrogen (except Arhar).
- Major pulses producing states are UP, Rajasthan, MP, Maharashtra and Karnataka.

Food Crops Other than Grains

Oil Seeds :-

- Oil seeds cover about 12% of total cropped area of India.
- Major oil seeds grown in India are Groundnut, Mustard, Soyabean, Linseed, Cotton seeds, Castor seeds and Sesamum (Til).
- Some of them are used as raw material of soaps, cosmetics and ointments.
- India is the second largest producer of groundnut after China.
- Groundnut is kharif crop.
- Gujarat is the largest producer of groundnut, followed by Andhra Pradesh and Tamil Nadu.

Tea :- (चाय)

- India is the second largest producer of tea in world after China.
- It is a beverage crop which was initially introduced by Britishers and example of plantation crop.
- It is grown on well drained fertile soil, rich in humus and organic matter.
- Tea bushes require warm and moist frost-free climate all through the year.
- Major tea producing states are Assam, hills of Darjeeling, West Bengal, Kerala, Uttarakhand, Tripura, Meghalaya.

Sugarcane :- (गन्ना)

- This is a tropical as well as sub-tropical crop that requires almost a year to grow.
- It can be grown on a variety of soils, as long as they are fertile and well-drained.
- It requires hot and humid climate to grow with temperature between $21^{\circ}\text{C} - 27^{\circ}\text{C}$ and annual rainfall between 75-100 cm.

- Position of India is second in world. [cbse 2016]
- It is the main source of sugar, gur, khandasa etc. India is second largest producer of sugarcane in world after Brazil.
- Major sugarcane producing states are UP, Maharashtra, Punjab, Haryana, Karnataka and Andhra Pradesh.

Coffee: (कॉफी)

- Indian coffee is known for its good quality and is in demand in all over the world.
- India has the Arabian variety which was initially brought from Yemen.
- In India for the first time the cultivation of coffee was done on Baba Budan Hills.
- Major coffee producing states are Karnataka, Kerala and Tamil Nadu.

Horticulture Crops:

- These include the cultivation of both fruits and vegetables.
 - India is the second largest producer of these after China.
 - India produces both tropical and temperate fruits.
 - Mangoes of Maharashtra, UP, WB
 - Oranges of Nagpur and Cherrapunjee
 - Bananas of Kerala and Tamil Nadu
 - Lichi & Guava of UP and Bihar
 - Pineapples of Meghalaya
 - Grapes of A.P., Telangana and Maharashtra
 - Apples, pears, Apricots of J&K, Himachal.
- They all are in demand all over the world.
- Important vegetable produces of India are pea, cauliflower, onion, cabbage, tomato, brinjal and potato.

Non-Food Crops

RUBBER: (रबर)

- Rubber is mainly an equatorial crop, but under special conditions it is also grown in tropical areas.
- It is the main raw material for many industries like auto types and tubes, tyres, belts and houses, footwear etc.
- It is mainly grown in Karnataka, Tamil Nadu, Kerala, and Andaman and Nicobar Islands.

FIBRE CROPS:

- Cotton, Jute, hemp and natural silk are the four major fibre crops grown in India.
- The first three are plant products while silk is obtained from cocoons of the silkworms.
- Rearing of silk worm for production of silk fibre is known as Sericulture.

Cotton : (कॉटन)

- It is the main raw material for cotton textile industry.
- It grows well on drier parts of black soil in Deccan, it takes 6-8 months to mature.
- India is the second largest producer of cotton in world after China.
- It requires high temperature, light rainfall or irrigation, 210 frost-free days and bright sunshine for its growth.
- Major cotton producing states are Maharashtra, Gujarat, MP, Haryana, Punjab, UP etc.

JUTE :- (जूट)

- Also called Golden fibre.
- This fibre is very strong, due to its roughness, it is used to make gunny bags, mats, ropes, yarn, carpets and other artefacts.
- It grows well on well-drained fertile soils in flood plains.
- Major jute producing states are W.B., Odisha, Bihar, Assam, Meghalaya.

Institutional and Technological Reforms to Help Farmers [cbse 2018]

- Provision for crop insurance against drought, flood, fire, fire and diseases, establishment of Grameen Banks for providing loan facilities at lower rates of interest.
- Kisan Credit Card (KCC) and Personal Accident Insurance Scheme (PAIS) are some other schemes introduced by government for benefits of farmers.
- Special weather bulletins and agricultural programmes for farmers were introduced on the radio and television.
- The government also announces Minimum Support Price (MSP) to check exploitation of farmers by middlemen and speculators.
- Establishment of Indian Council of Agricultural Research (ICAR), agricultural universities veterinary services and animal breeding centres, horticulture development and weather forecast were given priority to benefit Indian farmers.

K3B ⇒ Under globalisation, particularly after 1990, the farmers in India have been exposed to next challenges. Despite being an important producer of rice, cotton, rubber, tea, coffee, jute and spices our agricultural products are not able to compete with the developed countries because of the highly subsidised agriculture in those countries.

1. How much of India's population is indulged in agricultural activities?
2. What is the other name of primitive subsistence farming?
3. What is Slash and burn called in :
 - a. North eastern states
 - b. Manipur
 - c. Chhattisgarh and Andaman and Nicobar islands
 - d. Mexico and Central America
 - e. Venezuela
 - f. Brazil
 - g. Central Africa
 - h. Indonesia
 - i. Vietnam

AGRICULTURE

4



India is an agriculturally important country. Two-thirds of its population is engaged in agricultural activities. Agriculture is a primary activity, which produces most of the food that we consume. Besides food grains, it also produces raw material for various industries.

Can you name some industries based on agricultural raw material?

Moreover, some agricultural products like tea, coffee, spices, etc. are also exported.

TYPES OF FARMING

Agriculture is an age-old economic activity in our country. Over these years, cultivation methods have changed significantly depending upon the characteristics of physical environment, technological know-how and socio-cultural practices. Farming varies from subsistence to commercial type. At present, in different parts of India, the following farming systems are practised.

Primitive Subsistence Farming

This type of farming is still practised in few pockets of India. Primitive subsistence agriculture is practised on small patches of land with the help of primitive tools like hoe, dao and digging sticks, and family/community labour. This type of farming depends upon monsoon, natural fertility of the soil and suitability of other environmental conditions to the crops grown.

It is a 'slash and burn' agriculture. Farmers clear a patch of land and produce cereals and other food crops to sustain their family. When the soil fertility decreases, the farmers shift and clear a fresh patch of land for cultivation. This type of shifting allows Nature to replenish the fertility of the soil

through natural processes; land productivity in this type of agriculture is low as the farmer does not use fertilisers or other modern inputs. It is known by different names in different parts of the country.

Can you name some such types of farmings?

It is *jhumming* in north-eastern states like Assam, Meghalaya, Mizoram and Nagaland; Pamlou in Manipur, Dipa in Bastar district of Chhattisgarh, and in Andaman and Nicobar Islands.

Jhumming: The 'slash and burn' agriculture is known as 'Milpa' in Mexico and Central America, 'Conuco' in Venezuela, 'Roca' in Brazil, 'Masole' in Central Africa, 'Ladang' in Indonesia, 'Ray' in Vietnam.

In India, this primitive form of cultivation is called 'Bewar' or 'Dahiya' in Madhya Pradesh, 'Podu' or 'Penda' in Andhra Pradesh, 'Pama Dabi' or 'Koman' or 'Bringa' in Odisha, 'Kumari' in Western Ghats, 'Valre' or 'Waltre' in South-eastern Rajasthan, 'Khil' in the Himalayan belt, 'Kuruwa' in Jharkhand, and 'Jhumming' in the North-eastern region.



Fig. 4.1

4. What are the main characteristics of commercial farming?

5. Plantation is also a type of farming?

Rinjha lived with her family in a small village at the outskirts of Diphu in Assam. She enjoys watching her family members clearing, slashing and burning a patch of land for cultivation. She often helps them in irrigating the fields with water running through a bamboo canal from the nearby spring. She loves the surroundings and wants to stay here as long as she can, but this little girl has no idea about the declining fertility of the soil and her family's search for fresh a patch of land in the next season.

Can you name the type of farming Rinjha's family is engaged in?

Can you enlist some crops which are grown in such farming?

Intensive Subsistence Farming

This type of farming is practised in areas of high population pressure on land. It is labour-intensive farming, where high doses of biochemical inputs and irrigation are used for obtaining higher production.

Can you name some of the states of India where such farming is practised?

Though the 'right of inheritance' leading to the division of land among successive generations has rendered land-holding size uneconomical, the farmers continue to take maximum output from the limited land in the absence of alternative source of livelihood. Thus, there is enormous pressure on agricultural land.

Commercial Farming

The main characteristic of this type of farming is the use of higher doses of modern inputs, e.g. high yielding variety (HYV) seeds, chemical fertilisers, insecticides and pesticides in order to obtain higher productivity. The degree of commercialisation of agriculture varies from one region to another. For example, rice is a commercial crop in Haryana and Punjab, but in Odisha, it is a subsistence crop.

Can you give some more examples of crops which may be commercial in one region and may provide subsistence in another region?

Plantation is also a type of commercial farming. In this type of farming, a single crop is grown on a large area. The plantation has an interface of agriculture and industry. Plantations cover large tracts of land, using capital intensive inputs, with the help of migrant labourers. All the produce is used as raw material in respective industries.

In India, tea, coffee, rubber, sugarcane, banana, etc., are important plantation crops. Tea in Assam and North Bengal coffee in



Fig. 4.2: Banana plantation in Southern part of India

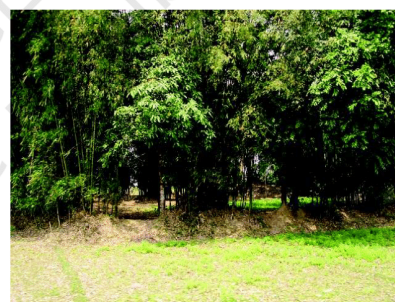


Fig. 4.3: Bamboo plantation in North-east

Karnataka are some of the important plantation crops grown in these states. Since the production is mainly for market, a well-developed network of transport and communication connecting the plantation areas, processing industries and markets plays an important role in the development of plantations.

6. The success of _____ in Punjab, Haryana, UP and Rajasthan has been an important factor in growth of rabi crops.

7. What are the three crops of paddy which are grown in a year in states like Assam, West Bengal and Odisha.

8. India is _____ largest producer of rice in the world.



CROPPING PATTERN

You have studied the physical diversities and plurality of cultures in India. These are also reflected in agricultural practices and cropping patterns in the country. Various types of food and fibre crops, vegetables and fruits, spices and condiments, etc. constitute some of the important crops grown in the country. India has three cropping seasons — **rabi**, **kharif** and **zaid**.

Rabi crops are sown in winter from October to December and harvested in summer from April to June. Some of the important rabi crops are wheat, barley, peas, gram and mustard. Though, these crops are grown in large parts of India, states from the north and north-western parts such as Punjab, Haryana, Himachal Pradesh, Jammu and Kashmir, Uttarakhand and Uttar Pradesh are important for the production of wheat and other rabi crops. Availability of precipitation during winter months due to the western temperate cyclones helps in the success of these crops. However, the success of the green revolution in Punjab, Haryana, western Uttar Pradesh and parts of Rajasthan has also been an important factor in the growth of the above-mentioned rabi crops.

Kharif crops are grown with the onset of monsoon in different parts of the country and these are harvested in September-October. Important crops grown during this season are paddy, maize, jowar, bajra, tur (arhar), moong, urad, cotton, jute, groundnut and soyabean. Some of the most important rice-growing regions are Assam, West Bengal, coastal regions of Odisha, Andhra Pradesh, Telangana, Tamil Nadu, Kerala and Maharashtra, particularly the (Konkan coast) along with Uttar Pradesh and Bihar. Recently, paddy has also become an important crop of Punjab and Haryana. In states like Assam, West Bengal and Odisha, three crops of paddy are grown in a year. These are *Aus*, *Aman* and *Boro*.

In between the rabi and the kharif seasons, there is a short season during the summer months known as the **Zaid** season. Some of the crops produced during 'zaid' are watermelon, muskmelon, cucumber,

vegetables and fodder crops. Sugarcane takes almost a year to grow.

Major Crops

A variety of food and non food crops are grown in different parts of the country depending upon the variations in soil, climate and cultivation practices. Major crops grown in India are rice, wheat, millets, pulses, tea, coffee, sugarcane, oil seeds, cotton and jute, etc.

Rice: It is the staple food crop of a majority of the people in India. Our country is the second largest producer of rice in the world after China. It is a kharif crop which requires high temperature, (above 25°C) and high humidity with annual rainfall above 100 cm. In the areas of less rainfall, it grows with the help of irrigation.

Rice is grown in the plains of north and north-eastern India, coastal areas and the deltaic regions. Development of dense network



Fig. 4.4 (a): Rice Cultivation

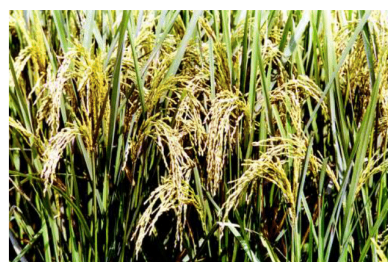


Fig. 4.4 (b): Rice is ready to be harvested in the field



9. Which rabi crop is the main food crop in the north and north western part of the country which requires a cool growing season and a bright one at the time of ripening?

10. Which crop is used as both food and fodder?

11. India is the largest producer as well as consumer of _____ in the world?



of canal irrigation and tubewells have made it possible to grow rice in areas of less rainfall such as Punjab, Haryana and western Uttar Pradesh and parts of Rajasthan.

Wheat: This is the second most important cereal crop. It is the main food crop, in north and north-western part of the country. This rabi crop requires a cool growing season and a bright sunshine at the time of ripening. It requires 50 to 75 cm of annual rainfall evenly-distributed over the growing season. There are two important wheat-growing zones in the country – the Ganga-SatluJ plains in the north-west and black soil region of the Deccan. The major wheat-producing states are Punjab, Haryana, Uttar Pradesh, Bihar, Rajasthan and parts of Madhya Pradesh.



Fig. 4.5: Wheat Cultivation

Millets: Jowar, bajra and ragi are the important millets grown in India. Though, these are known as coarse grains, they have very high nutritional value. For example, ragi is very rich in iron, calcium, other micro nutrients and roughage. Jowar is the third most important food crop with respect to area and production. It is a rain-fed crop mostly grown in the moist areas which hardly needs irrigation. Major Jowar producing States were Maharashtra, Karnataka, Andhra Pradesh and Madhya Pradesh in 2011-12.

Bajra grows well on sandy soils and shallow black soil. Major Bajra producing States were: Rajasthan, Uttar Pradesh, Maharashtra, Gujarat and Haryana in 2011-12. Ragi is a



Fig. 4.6: Bajra Cultivation

crop of dry regions and grows well on red, black, sandy, loamy and shallow black soils. Major ragi producing states are: Karnataka, Tamil Nadu, Himachal Pradesh, Uttarakhand, Sikkim, Jharkhand and Arunachal Pradesh.

Maize: It is a crop which is used both as food and fodder. It is a kharif crop which requires temperature between 21°C to 27°C and grows well in old alluvial soil. In some states like Bihar



Fig. 4.7: Maize Cultivation

maize is grown in rabi season also. Use of modern inputs such as HYV seeds, fertilisers and irrigation have contributed to the increasing production of maize. Major maize-producing states are Karnataka, Uttar Pradesh, Bihar, Andhra Pradesh, Telangana and Madhya Pradesh.

Pulses: India is the largest producer as well as the consumer of pulses in the world. These are the major source of protein in a vegetarian diet. Major pulses that are grown in India are tur (arhar), urad, moong, masur, peas and

12. _____ need less moisture and survive even in dry conditions.

13. India is _____ largest producer of sugarcane.

14. Which is used as raw material in the production of soap, cosmetics and ointments?



gram. Can you distinguish which of these pulses are grown in the kharif season and which are grown in the rabi season? Pulses need less moisture and survive even in dry conditions. Being leguminous crops, all these crops except arhar help in restoring soil fertility by fixing nitrogen from the air. Therefore, these are mostly grown in rotation with other crops. Major pulse producing states in India are Madhya Pradesh, Uttar Pradesh, Rajasthan, Maharashtra and Karnataka.

Food Crops other than Grains

Sugarcane: It is a tropical as well as a subtropical crop. It grows well in hot and humid climate with a temperature of 21°C to 27°C and an annual rainfall between 75cm. and 100cm. Irrigation is required in the regions of low rainfall. It can be grown on a variety of



Fig. 4.8: Sugarcane Cultivation

soils and needs manual labour from sowing to harvesting. India is the second largest producer of sugarcane only after Brazil. It is the main source of sugar, gur (jaggary), khandsari and molasses. The major sugarcane-producing

states are Uttar Pradesh, Maharashtra, Karnataka, Tamil Nadu, Andhra Pradesh, Telangana, Bihar, Punjab and Haryana.

Oil Seeds: In 2008 India was the second largest producer of groundnut in the world after china. In rape seed production India was third largest producer in the world after Canada and China in 2008. Different oil seeds are grown covering approximately 12 per cent of the total cropped area of the country. Main oil-seeds produced in India are groundnut, mustard, coconut, sesamum (til), soyabean, castor seeds, cotton seeds, linseed and sunflower. Most of these are edible and used as cooking mediums. However, some of these are also used as raw material in the production of soap, cosmetics and ointments.

Groundnut is a kharif crop and accounts for about half of the major oilseeds produced in the country. Gujarat was the largest producer of groundnut followed by Andhra Pradesh and Tamil Nadu in 2011-12. Linseed and mustard are rabi crops. Sesamum is a kharif crop in north and rabi crop in south India. Castor seed is grown both as rabi and kharif crop.

Tea: Tea cultivation is an example of plantation agriculture. It is also an important beverage crop introduced in India initially by the British. Today, most of the tea plantations are owned by Indians. The tea plant grows well in tropical and sub-tropical climates endowed with deep and fertile well-drained soil, rich in humus and organic matter. Tea bushes require warm and moist frost-free climate all through the year. Frequent showers evenly distributed over the year ensure continuous growth of tender leaves. Tea is a labour-intensive industry. It requires abundant,

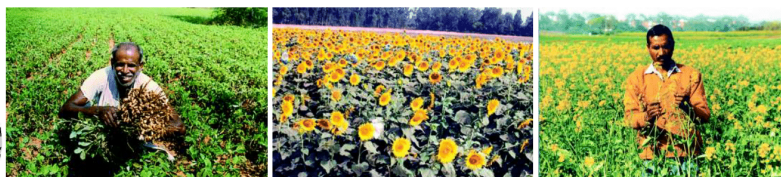


Fig. 4.9: Groundnut, sunflower and mustard are ready to be harvested in the field



15. Why is tea stored within a tea garden?
16. Which variety of coffee is in great demand all over the world?
17. Where was the cultivation of the Arabica variety of coffee first introduced?
18. How much percentage of World's vegetables are produced in India?



cheap and skilled labour.

Tea is processed within the tea garden to restore its freshness. Major tea-producing states are Assam, hills of Darjeeling and Jalpaiguri districts, West Bengal, Tamil Nadu and Kerala. Apart from these, Himachal Pradesh, Uttarakhand, Meghalaya, Andhra Pradesh and Tripura are also tea-producing states in the country. In 2008 India was the third largest producer of tea after China and Turkey.

Coffee: In 2008 India produced 3.2 per cent of the world coffee production. Indian coffee is known in the world for its good quality. The Arabica variety initially brought from Yemen is produced in the country. This variety is in great demand all over the world. Initially its cultivation was introduced on the Baba Budan Hills and even today its cultivation is confined to the Nilgiri in Karnataka, Kerala and Tamil Nadu.



Fig. 4.10: Tea Cultivation



Fig. 4.11: Tea-leaves Harvesting

tropical as well as temperate fruits. Mangoes of Maharashtra, Andhra Pradesh, Telangana, Uttar Pradesh and West Bengal, oranges of Nagpur and Cherrapunjee (Meghalaya), bananas of Kerala, Mizoram, Maharashtra and Tamil Nadu, lichi and guava of Uttar Pradesh and Bihar, pineapples of Meghalaya, grapes of Andhra Pradesh, Telangana and Maharashtra, apples, pears, apricots and walnuts of Jammu and Kashmir and Himachal Pradesh are in great demand the world over.



Fig. 4.12: Apricots, apple and pomegranate

Horticulture Crops: In 2008 India was the second largest producer of fruits and vegetables in the world after China. India is a producer of

India produces about 13 per cent of the world's vegetables. It is an important producer of pea, cauliflower, onion, cabbage, tomato, brinjal and potato.



Fig. 4.13: Cultivation of vegetables – peas, cauliflower, tomato and brinjal

19. What is the rank of India among the world's natural rubber producers?
20. Rearing of silk worms for the production of silk fibre is known as _____?
21. India is believed to be original home of the _____ plant.
22. What is known as golden fibre?
23. What temperature is required during the time of growth of Jute?



Non-Food Crops

Rubber: It is an equatorial crop, but under special conditions, it is also grown in tropical and sub-tropical areas. It requires moist and humid climate with rainfall of more than 200 cm. and temperature above 25°C.

Rubber is an important industrial raw material. It is mainly grown in Kerala, Tamil Nadu, Karnataka and Andaman and Nicobar islands and Garo hills of Meghalaya. In 2010-11 India ranked fourth among the world's natural rubber producers.

Activity

List the items which are made of rubber and are used by us.

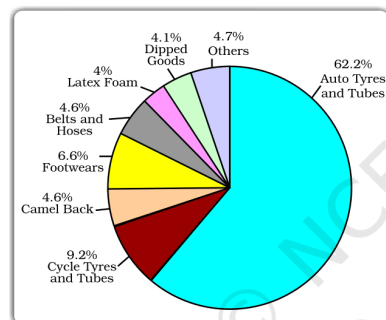


Fig. 4.14: Consumption of natural rubber - 2010-11

Source : Statistics and Planning Department Rubber Board, Kottayam, Kerala

Fibre Crops: Cotton, jute, hemp and natural silk are the four major fibre crops grown in India. The first three are derived from the crops grown in the soil, the latter is obtained from cocoons of the silkworms fed on green leaves specially mulberry. Rearing of silk worms for the production of silk fibre is known as **sericulture**.

Cotton: India is believed to be the original home of the cotton plant. Cotton is one of the main raw materials for cotton textile industry. In 2008 India was second largest producer of cotton after China. Cotton grows well in drier parts of the black cotton soil of the Deccan

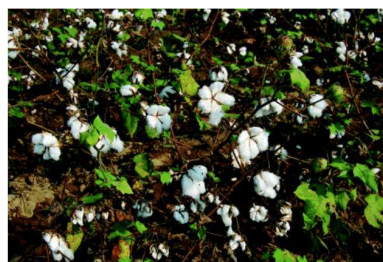


Fig. 4.15: Cotton Cultivation

plateau. It requires high temperature, light rainfall or irrigation, 210 frost-free days and bright sun-shine for its growth. It is a kharif crop and requires 6 to 8 months to mature. Major cotton-producing states are Maharashtra, Gujarat, Madhya Pradesh, Karnataka, Andhra Pradesh, Telangana, Tamil Nadu, Punjab, Haryana and Uttar Pradesh.

Jute: It is known as the golden fibre. Jute grows well on well-drained fertile soils in the flood plains where soils are renewed every year. High temperature is required during the time of growth. West Bengal, Bihar, Assam, Odisha and Meghalaya are the major jute producing states. It is used in making gunny bags, mats, ropes, yarn, carpets and other artefacts. Due to its high cost, it is losing market to synthetic fibres and packing materials, particularly the nylon.

Technological and Institutional Reforms

It was mentioned in the previous pages that agriculture has been practised in India for thousands of years. Sustained uses of land without compatible techno-institutional changes have hindered the pace of agricultural development. In spite of development of sources of irrigation most of the farmers in large parts of the country still depend upon monsoon and natural fertility in order to carry on their agriculture. For a growing population, this poses a serious challenge. Agriculture which provides livelihood for more than 60 per cent of its population, needs some serious technical and



24. What was the main focus of our First Five Year Plan?
25. After Gandhiji's martyrdom, who took and undertook *padyatra* to spread Gandhiji's message covered almost the entire country?
26. Some zamindars, owners of many villages offered to distribute some villages among the landless, it was known as _____?



Fig. 4.16: Modern technological equipments used in agriculture

institutional reforms. Thus, collectivisation, consolidation of holdings, cooperation and abolition of zamindari, etc. were given priority to bring about institutional reforms in the country after Independence. 'Land reform' was the main focus of our First Five Year Plan. The right of inheritance had already led to fragmentation of land holdings necessitating consolidation of holdings.

The laws of land reforms were enacted but the laws of implementation were lacking or lukewarm. The Government of India embarked upon introducing agricultural reforms to improve Indian agriculture in the 1960s and 1970s. The Green Revolution based on the use of package technology and the White Revolution (Operation Flood) were some of the strategies initiated to improve the lot of Indian agriculture. But, this too led to the concentration of development in few selected areas. Therefore, in the 1980s and 1990s, a comprehensive land development programme was initiated, which included both institutional and technical reforms. Provision for crop insurance against drought, flood, cyclone, fire and disease, establishment of Grameen banks, cooperative societies and banks for providing loan facilities to the farmers at lower rates of interest were some important steps in this direction.

Kissan Credit Card (KCC), Personal Accident Insurance Scheme (PAIS) are some other schemes introduced by the Government of India for the benefit of the farmers. Moreover, special weather bulletins and agricultural

programmes for farmers were introduced on the radio and television. The government also announces minimum support price, remunerative and procurement prices for important crops to check the exploitation of farmers by speculators and middlemen.

Bhoodan - Gramdan

Mahatma Gandhi declared Vinoba Bhave as his spiritual heir. He also participated in Satyagraha as one of the foremost satyagrahis. He was one of the votaries of Gandhi's concept of **gram swarajya**. After Gandhiji's martyrdom, Vinoba Bhave undertook **padyatra** to spread Gandhiji's message covered almost the entire country. Once, when he was delivering a lecture at Pochampalli in Andhra Pradesh, some poor landless villagers demanded some land for their economic well-being. Vinoba Bhave could not promise it to them immediately but assured them to talk to the Government of India regarding provision of land for them if they undertook cooperative farming. Suddenly, Shri Ram Chandra Reddy stood up and offered 80 acres of land to be distributed among 80 land-less villagers. This act was known as 'Bhoodan'. Later he travelled and introduced his ideas widely all over India. Some zamindars, owners of many villages offered to distribute some villages among the landless. It was known as **Gramdan**. However, many land-owners chose to provide some part of their land to



27. The Bhoodan-Gramdan movement initiated by Vinoba Bhave is also known as?

28. Which organisation was established when government of India made concerted efforts to modernise agriculture?

29. What are the two components of National food security system?



the poor farmers due to the fear of land ceiling act. This Bhoodan-Gramdan movement initiated by Vinoba Bhave is also known as the **Blood-less Revolution**.

Contribution of agriculture to the national economy, employment and output

Agriculture has been the backbone of the Indian economy though its share in the Gross Domestic Product (GDP) has registered a declining trend from 1951 onwards; in 2010-11 about 52 per cent of the total work force was employed by the farm sector which makes more than half of the Indian Population dependent on agriculture for sustenance.

The declining share of agriculture in the GDP is a matter of serious concern because any decline and stagnation in agriculture will lead to a decline in other spheres of the economy having wider implications for society.

Considering the importance of agriculture in India, the Government of India made concerted efforts to modernise agriculture. Establishment of Indian Council of Agricultural Research (ICAR), agricultural universities, veterinary services and animal breeding centres, horticulture development, research and development in the field of meteorology and weather forecast, etc. were given priority for improving Indian agriculture. Apart from this, improving the rural infrastructure was also considered essential for the same.

Activity

Find out why an Indian farmer does not want his son to become a farmer.

From the Table 4.1, it is clear that though the GDP growth rate is increasing over the years, it is not generating sufficient employment opportunities in the country. The growth rate in agriculture is decelerating which is an alarming situation. Today, Indian farmers are facing a big challenge from international competition and our government is going ahead with reduction in the public investment in agriculture sector particularly in irrigation, power, rural roads, market and



Table 4.1: India: Growth of GDP and major sectors (in %)

Sector	Tenth Five Year Plan (2002-07)	11 th Five Year Plan (2007-12)	2012-17	
			Target I	Target II
Agriculture	1.7	3.2	4.0	4.2
Industries	8.3	7.4	9.6	10.9
Services	9.0	10.0	10.0	10.0
GDP	7.2	8.2	9.0	9.5

Source: Faster, Sustainable and more Inclusive: An approach to the 12th Five Year Plan, Planning Commission, Government of India-2011.

mechanisation. Subsidy on fertilisers is decreased leading to increase in the cost of production. Moreover, reduction in import duties on agricultural products have proved detrimental to agriculture in the country. Farmers are withdrawing their investment from agriculture causing a downfall in the employment in agriculture.

When farmers have been facing so many problems and land under agriculture is decreasing, can we think of alternative employment opportunities in the agriculture sector?

Why are farmers committing suicides in several states of the country?

FOOD SECURITY

You know that food is a basic need and every citizen of the country should have access to food which provides minimum nutritional level. If any segment of our population does not have this access, that segment suffers from lack of food security. The number of people who do not have food security is disproportionately large in some regions of our country, particularly in economically less developed states with higher incidence of poverty. The remote areas of the country are more prone to natural disasters and uncertain food supply. In order to ensure availability of food to all sections of society our government carefully designed a national food security system. It consists of two components (a) buffer stock and (b) public distribution system (PDS).

30. Which program provides food grains and other essential commodities at subsidised prices in rural and urban areas?
31. Which organisation is responsible for procuring and stocking foodgrains in India?

As you know, PDS is a programme which provides food grains and other essential commodities at subsidised prices in rural and urban areas.

India's food security policy has a primary objective to ensure availability of foodgrains to the common people at an affordable price. It has enabled the poor to have access to food. The focus of the policy is on growth in agriculture production and on fixing the support price for procurement of wheat and rice, to maintain their stocks. Food Corporation of India (FCI) is responsible for procuring and stocking foodgrains, whereas distribution is ensured by public distribution system (PDS).

The FCI procures foodgrains from the farmers at the government announced minimum support price (MSP). The government used to provide subsidies on agriculture inputs such as fertilizers, power and water. These subsidies have now reached unsustainable levels and have also led to large scale inefficiencies in the use of these scarce inputs. Excessive and imprudent use of fertilizers and water has led to waterlogging, salinity and depletion of essential micronutrients in the soil. The high MSP, subsidies in input and committed FCI purchases have distorted the cropping pattern. Wheat and paddy crops are being grown more for the MSP they get. Punjab and Haryana are foremost examples. This has also created a serious imbalance in inter-crop parities.

You already know that the consumers are divided into two categories : below poverty line (BPL) and above poverty line (APL), with the issue price being different for each category. However, this categorisation is not perfect and a number of deserving poor have been excluded from the BPL category. Moreover, some of the so called APL slip back to BPL, because of the failure of even one crop and it is administratively difficult to accommodate such shifts.

Each district and block can be made self sufficient in foodgrain production if government provides proper agricultural infrastructure, credit linkages and also encourages the use of latest techniques. Instead of concentrating only on rice or wheat, the food crop with a better

growth potential in that particular area must be encouraged. Creation of necessary infrastructure like irrigation facilities, availability of electricity etc. may also attract private investments in agriculture.

The focus on increasing foodgrain production which should be on a sustainable basis and also free trade in grains will create massive employment and reduce poverty in rural areas.

There has been a gradual shift from cultivation of food crops to cultivation of fruits, vegetables, oil-seeds and industrial crops. This has led to the reduction in net sown area under cereals and pulses. With the growing population of India, the declining food production puts a big question mark over the country's future food security. The competition for land between non-agricultural uses such as housing etc. and agriculture has resulted in reduction in the net sown area. The productivity of land has started showing a declining trend. Fertilisers, pesticides and insecticides, which once showed dramatic results, are now being held responsible for degrading the soils. Periodic scarcity of water has led to reduction in area under irrigation. Inefficient water management has led to water logging and salinity.

Activity

Draw bar diagram showing the trend of food grain production in India during last five years. Find out the reason of this trend.

Table 4.2: India: Foodgrains production

(million tonnes)

Cereals	2006-07	2007-08	2008-09	2009-10	2010-11 (Provisional)
Rice	93.4	96.7	99.2	89.10	95.3
Wheat	75.8	78.6	80.7	80.80	85.9
Coarse grains					
Jowar & Bajra)	18.0	17.4	16.3	16.6	16.5
Pulses	14.2	14.8	14.6	14.70	18.1
Total	201.4	207.5	210.8	201.2	215.8

Source: Directorate of Economics and Statistics, Department of Agriculture and Cooperation, Economic Survey, 2011-12.

The big farmers with deeper tubewells still have water, but many others face a water crisis. Inadequate storage and marketing facilities also act as a disincentive to the farmer. Thus, the farmers are badly affected by the uncertainties of production and market. They suffer from a double disadvantage as they pay high prices for inputs such as HYV seeds, fertilisers etc. but lack the bargaining power to fix prices in their favour. All the production reaches the market

Impact of Globalisation on Agriculture

During the British period cotton belts of India attracted the British and ultimately cotton was exported to Britain as a raw material for their textile industries. Cotton textile industry in Manchester and Liverpool flourished due to the availability of good

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32. Which movement was started in Bihar because farmers of that region were forced to grow Indigo on their land because it was necessary for the textile industries located in Britain?
33. In which year Champaran movement started?
34. _____ engineering is recognised as a powerful supplement in investing new hybrid varieties of seeds.
35. Which type of farming is practised without factory made chemicals such as fertilisers and pesticides?



quality cotton from India. You have read about the Champaran movement which started in 1917 in Bihar. This was started because farmers of that region were forced to grow indigo on their land because it was necessary for the textile industries which were located in Britain. They were unable to grow foodgrains to sustain their families.

Under globalisation, particularly after 1990, the farmers in India have been exposed to new challenges. Despite being an important producer of rice, cotton, rubber, tea, coffee, jute and spices our agricultural products are not able to compete with the developed countries because of the highly subsidised agriculture in those countries.



Fig. 4.17: Tissue culture of teak clones

Today, Indian agriculture finds itself at the crossroads. To make agriculture successful and profitable, proper thrust should be given to the improvement of the condition of marginal and small farmers. The green revolution promised much. But today it's under controversies. It is being alleged that it has caused land degradation due to overuse of chemicals, drying aquifers and vanishing biodiversity. The keyword today is "gene revolution". Which includes genetic engineering.

Genetic engineering is recognised as a powerful supplement in inventing new hybrid varieties of seeds.

Change in cropping pattern for example from cereals to high-value crops will mean that India will have to import food. During 1960's this would have been seen as a disaster. But if India imports cereals while exporting high-value commodities, it will be following successful economies like Italy, Israel and Chile. These countries export farm products (fruits, olives, speciality seeds and wine) and import cereals. Are we ready to take this risk? Debate the issue.

Can you name any gene modified seed used vastly in India?



Fig. 4.18: Problems associated with heavy pesticide use are widely recognised in developed and developing countries

Infact organic farming is much in vogue today because it is practised without factory made chemicals such as fertilisers and pesticides. Hence, it does not affect environment in a negative manner.

A few economists think that Indian farmers have a bleak future if they continue growing foodgrains on the holdings that grow smaller and smaller as the population rises. India's rural population is about 600 million which depends upon 250 million (approximate) hectares of agricultural land, an average of less than half a hectare per person.

Indian farmers should diversify their cropping pattern from cereals to high-value crops. This will increase incomes and reduce environmental degradation simultaneously. Because fruits, medicinal herbs, flowers, vegetables, bio-diesel crops like jatropha and jojoba need much less irrigation than rice or sugarcane. India's diverse climate can be harnessed to grow a wide range of high-value crops.



ANSWERS(Agriculture):

1. Two third
2. Slash and burn agriculture
3. A. Jhumming
B. Pamlou
C. Dipa
D. Milpa
E. Conuca
F. Roca
G. Masole
H. Ladang
I. Ray
4. Higher doses of modern input
5. Commercial
6. Green revolution
7. Aus, Aman and Boro
8. Second
9. Wheat
10. Maize
11. Pulses
12. Pulses
13. Second
14. Oil seeds
15. To restore its freshness
16. Arabica variety
17. Baba Budan Hills
18. 13%
19. 4
20. Sericulture
21. Cotton
22. Jute
23. High
24. Land reform
25. Vinoba Bhave
26. Gramdan
27. Blood-less revolution
28. Indian Council of Agriculture(ICAR)
29. A. Buffer stock
B. Public distribution system (PDS)
30. PDS
31. Food Corporation of India (FCI)
32. Champaran movement
33. 1917
34. Genetic
35. Organic Farming

QUESTIONS FROM CBSE SQP

6. Choose the correctly matched pair about the crops and the areas they are grown in:

- A. Groundnut- Assam
- B. Tea- Gujarat
- C. Coffee- Karnataka
- D. Sugarcane – Chhattisgarh

Ans. C. Coffee- Karnataka (Pg. 41)

Read the source given below and answer the questions by choosing the most appropriate option:

There has been a gradual shift from cultivation of food crops to cultivation of fruits, vegetables, oil-seeds and industrial crops. This has led to the reduction in net sown area under cereals and pulses. With the growing population of India, the declining food production puts a big question mark over the country's future food security.

The competition for land between non-agricultural uses such as housing etc. and agriculture has resulted in reduction in the net sown area. The productivity of land has started showing a declining trend. Fertilisers, pesticides and insecticides, which once showed dramatic results, are now being held responsible for degrading the soils. Periodic

scarcity of water has led to reduction in area under irrigation. Inefficient water management has led to water logging and salinity.

53. One can infer from the above given information that marginal and small farmers have been pushed out of cultivation. Which one of the following is the prominent cause?

- A. Food and fruit crops are expensive in market
- B. Shift to multifarious crops according to demand
- C. Periodic scarcity of water in many regions
- D. Soil degradation and extensive Green Revolution

Ans. D.-Soil degradation and extensive Green Revolution (Pg-45)

54. Read the following statements and find the correct from the given options:

- I. Indian farmers are diversifying their cropping pattern.
- II. They are shifting production from cereals to fruits, vegetables, etc.
- III. Jute is in high demand in the Indian market.

Options:

- A. I & II
- B. II&III
- C. III Only
- D. II Only

Ans. A-I &II. (Pg. 45)

55. According to the information given above, there has been reduction in the net sown area under cereals and pulses. Identify the reason.

- A. Lack of markets to sell cereals and pulses
- B. Earn more income from non-agricultural sector
- C. Need of huge labour in cultivating cereals and pulses
- D. Availability of more profits from commercial crops

Ans. D. Availability of more profits from commercial crops (Pg45.)

56. 'Fertilisers, pesticides and insecticides, which once showed dramatic results, are now being held responsible for degrading the soil.' Infer the positive effects of these inputs noticed earlier from the following statements:

- A. These inputs have shown increased outputs and productivity.
- B. These are integral to the process of reducing agrarian losses.
- C. These inputs can cut the amount of harvestable produce.
- D. These are the leading causes of mortality and health problems.

Ans. A. These inputs have shown increased outputs and productivity. (Pg. 45)

57. There are states in India which are using fertilisers, pesticides and insecticides at excessive level to increase their agricultural production. Identify the states which are at prominent level from the following options.

- A. Karnataka and Kerala
- B. Haryana and Punjab
- C. Punjab and Gujarat
- D. Haryana and Telangana

Ans. B. Haryana and Punjab (Pg. 45)

58. Food production provides the base for food security and is a key determinant of food availability. Why is this trend shifting towards industrial crops? Choose the correct option in reference to the context.

- A. To improve the land use pattern
- B. To use intensive farming techniques
- C. To improve the fertility of soil
- D. To fetch more income and high earnings

Ans. D.-To fetch more income and high earnings (Pg. 45)

PREVIOUS YEAR QUESTIONS SPECIALLY CONVERTED IN MCQ FORMAT

1 Mark Questions

[1M, 2021 Sample Paper]

1. A type of millet rich in iron, calcium, other micro nutrients and roughage is

- A) Jowar
- B) Bajra
- C) Ragi
- D) Barri

Answer – C

[1M, 2012]

2. Which one of the following crop is commercial in one region and provides subsistence in another.

- A) Wheat
- B) Rice
- C) Maize
- D) Sugarcane

Answer – B

[1M, 2012]

3. What is Horticulure?

- A) Cultivation of Fruits.
- B) Cultivation of vegetables and flowers.
- C) harvesting of fruits, vegetables and flowers.
- D) both a and b

Answer – D

[1M, 2019]

4. Which one of the following points are about commercial farming

- A) use of inputs like HYV seeds, fertilizers.
- B) Use of primitive tools.
- C) Plantation is a type of commercial farming.
- D) both a and c.

Answer – D

[1M, 2019]

5. Which one of the following features are of alluvial soil

- A) Alluvial soil is covers the entire northern plains in India.

- B) Alluvial soil covers the entire southern plains in India.
- C) Alluvial is saline in nature and lacks humus and moisture.
- D) All are correct

Answer – A

[1M, 2019]

6. It begins with the withdrawal of monsoon in October, they are sown in winters from October to December. Is a feature of which 'crop season'

- A) Kharif
- B) Rabi
- C) Zaid
- D) None

Answer – B

[1M, 2015]

7. What are institutions reforms?

- A) Steps taken by the Government to bring improvements in agriculture
- B) Steps taken by the Government to bring improvement in Constitution
- C) None of the above
- D) both a and b

Answer – A

[1M, 2015]

8. Which one of the following steps are taken by Government to bring improvement in agriculture

- A) Green and White revolution
- B) promotion of Zamindari system
- C) Collectivization and Consolidation of land holdings.
- D) both a and b

Answer – D

[1M, 2019]

9. Which type of farming is practices on small patches of land

- A) Commercial farming
- B) Dry farming
- C) Primitive Subsistence farming
- D) both a and b

Answer – A

[1M, 2019]

10. Which type of farming is also called 'slash and burn' and primitive types of tools are used

- A) Dry farming
- B) Primitive Subsistence farming
- C) Commercial farming
- D) none of the above

Answer – B

[1M, 2019]

11. In which type of farming well-developed network of transport and communication is required

- A) Primitive Subsistence farming
- B) Dry Farming
- C) Commercial farming
- D) Vertical farming

Answer – C

[1M, 2019]

12. Which type of farming is highly productive

- A) Dry farming
- B) Primitive Subsistence farming
- C) Commercial farming
- D) none of the above

Answer – C

[1M, 2019]

13. Alluvial Soil contains

- A) sand
- B) silt and clay
- C) salt
- D) both a and b

Answer – D

[1M, 2019]

14. Which soil is ideal for the growth of crops like sugarcane, wheat and rice

- A) Black soil
- B) Alluvial soil
- C) Arid soil
- D) both a and c

Answer – B

[1M, 2019]

15. the soil according to age is classified into old alluvial and new alluvial is:

- A) Alluvial soil
- B) Arid soil
- C) Red soil
- D) none of the above

Answer - A

[1M, 2019]

16. Which of the following features are of 'Rabi Crop Season'

- A) At the time of ripening, it requires bright sunshine.
- B) Crops depend on sub-soil moisture.
- C) it requires loamy or alluvial soil.
- D) both a and b

Answer – D

[1M, 2019]

17. The soil which contains an ample amount of potash, phosphoric acid and lime:

- A) Black soil
- B) Red soil
- C) Alluvial soil
- D) both a and c

Answer – C

[1M, 2015]

18. Which one of the following features are correct about 'Kharif Crop Season'

- A) crops are harvested in September – October.
- B) Requires more rainfall between 100-110 cm.
- C) It requires alluvial or loamy soil.
- D) all of the above.

Answer – D

[1M, 2018]

19. When did the Government of India introduced various institutional and technological reforms to improve agriculture

- A) 1980s
- B) 1970s

C) 1990s

D) both a and c

Answer – D

[1M, 2018]

20. Reforms which come under the Land Development program:

A) provision for crop insurance against drought, flood, cyclone, fire and disease.

B) establishment of Grameen banks, cooperative societies and banks for providing loan facilities to the farmers at lower rates of interest.

C) Kisan Credit Card (KCC)

D) both a and b

Answer – D

[1M,2018]

21. Apart from land development reforms, which one of the following reforms were initiated by the Government for the farmers:

A) Kisan Credit Card (KCC): scheme for giving an easy and cheap loans to small farmers.

B) Minimum Support Price (MSP)

C) Grameen Banks

D) both a and b

Answer – D

[1M, 2018]

22. What was the objective behind Minimum Support Price (MSP) which was introduced by the Government of India for various Agricultural products like cereals, pulses and others.

A) to increase the productivity of cereals, pulses and others.

B) to check the exploitation of farmers by middleman.

C) to have a fair price of cereals and pulses.

D) both a and b

Answer – B

23. What are the major differences between primitive subsistence farming and commercial farming? [5M, 2013]

Primitive Subsistence Farming:

1. In this mainly cereals and other food crops are grown by farmers to sustain themselves.
 2. It is generally done on small land holding which are economically not viable.
 3. Primitive tools and animals are used for carrying out agricultural activities.
 4. In this, modern agricultural inputs, e.g. fertilizer and irrigation are not wisely used
 5. Subsistence Agriculture is called Jhumming in Assam, Mizoram, Kuruwa in Jharkhand.
- E.g. Slash and burn.

Commercial Farming:

1. in this crops are mainly grown for commercial purposes.
2. it is practiced on large pieces of land on scientific and commercial lines.
3. in this type of Agriculture, machines and modern technology are used.
4. There is higher use of modern agricultural in-puts, e.g., HYV seed, fertilizers, irrigation, etc are used to obtain higher yields and production.
5. The degree of commercialization varies from one region to another. Rice is a commercial crop in Punjab, while in Orissa it is subsistence crop. E.g., plantation agriculture.

[1M, 2012]

24. Which of the following points are correct about Plantation agriculture:

- A) a single type of crop is grown on a large area.
- B) lot of migrant labourers work on these estates.
- C) the production is mainly for the market, i.e. commercial agriculture.
- D) all of the above.

Answer – D

[1M, 2012]

25. Which type of crop is Maize?

- A) Kharif
- B) Rabi
- C) Zaid
- D) none of the above

Answer – A

[1M, 2012]

26. Required temperature and rainfall for maize?

- A) 21° to 27° and rainfall 50-100cm.

- B) 21° to 27° and rainfall 100-150 cm.
- C) 20° to 25° and rainfall 50-100 cm.
- D) 15° to 20° and rainfall 100-150 cm.

Answer – A

[1M, 2012]

27. Maize crop is used as:

- A) food
- B) fodder
- C) both a and b
- D) none of the above

Answer – C

[1M, 2012]

28. Major maize producing states are:

- A) Maharashtra, Tamil Nadu, Kerala.
- B) Uttar Pradesh, Bihar,
- C) Andhra Pradesh, Madhya Pradesh.
- D) both c and b

Answer – D